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JARRETT, RYAN A	
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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/851,905	Applicant(s) SONDERMAN ET AL.	
	Examiner Ryan A. Jarrett	Art Unit 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-11,13-21,23-41 and 43-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-11,13-21,23-41 and 43-61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pg. 19, filed 8/31/05, with respect to the 35 U.S.C. 112, 1st paragraph rejection of claims 1, 3-11, 13-21, 23-41, and 43-61 have been fully considered but they are not persuasive. The 35 U.S.C. 112, 1st paragraph rejection of claims 1, 3-11, 13-21, 23-41, and 43-61 has been maintained.

Applicant has cited page 9, lines 14-22 of the specification as clearly supporting the term "deposition rate sensor data". This passage makes reference to "sensor data", but nowhere does it explicitly or implicitly disclose that the "sensor data" is "deposition rate sensor data". Applicant argues on page 19 of the Response filed 8/31/05:

> "When examining the term 'monitored sensor data 115' in the Specification, it would be clear to those skilled in the art having benefit of the present disclosure that this data is relating to metal deposition rate. This assertion is supported by the fact the Specification discloses that sensor data 115 is used for metal deposition rate modeling and that it is '...appropriate for the deposition processing (MDP) performed on the workpiece 100..." Therefore, it is abundantly clear to those skilled in the art that the sensor data in page 9 of the Specification is deposition rate sensor data."

Just because the sensor data is used for metal deposition rate modeling does not mean that the sensor data is "deposition rate" sensor data. The deposition rate can be modeled using other types of data that have an influence on the deposition rate. The specification explicitly discloses examples of the different types monitored sensor data on page 8, none of which include deposition rate data:

"Examples of such tool variable and/or metal deposition processing (MDP) parameters may comprise the degree of sputter target consumption (as measured by sputter target life), deposition plasma power, deposition time, temperature, pressure, gas flow, other parameters that may affect (for example, increase or decrease) the mean-free-path of the sputtered species, and the like."

The Examiner would agree with Applicant's statement that the monitored sensor data 115 "relates" to metal deposition rate since all of the MDP parameters listed on page 8 of the specification "relate" to metal deposition rate since they all have some sort of direct effect on the resultant metal deposition rate, or the mean-free-path of the sputtered species. All of the aforementioned MDP parameters have one thing in common, they are all MDP tool input parameters that are used to control the metal deposition rate, or the mean-free-path of the sputtered species. The metal deposition rate is not a true input parameter in the sense that it cannot be directly controlled, whereas the aforementioned parameters are actual tool parameters that can be directly controlled. The metal deposition rate is controlled indirectly by manipulating the plasma power, deposition time, temperature, pressure, gas flow, etc. Further, the metal deposition rate cannot be considered a parameter that "may affect (for example, increase or decrease) the mean-free-path of the sputtered species" in the sense that the other parameters affect the mean-free-path of the sputtered species. It is true, the deposition rate and the mean-free-path are directly correlated, but they are essentially one and the same thing. In essence, the mean-free-path affects the deposition rate, the deposition rate does not affect the mean-free-path. If the mean-free-path is large, then the resultant deposition rate is high. If the mean-free-path is small, then the resultant deposition rate is low. The mean-free-path is in turn affected by the aforementioned

MDP tool input parameters of plasma power, deposition time, temperature, pressure, gas flow, etc., as disclosed in the specification. Therefore, deposition rate can clearly NOT be considered a parameter that affects the mean-free-path of the sputtered species. Therefore, there is nothing in the specification to imply that the Applicant was in possession of deposition rate sensors at the time the Application was filed.

Applicant further argues on page 19 of the Response filed 8/31/05:

> Further, as illustrated in Figure 7, the sensor data 115 is acquired by a monitoring tool 110 <u>immediately following the deposition process</u> 105. *See*, Figure 7. Therefore, one skilled in the art, upon reviewing Figure 7 would readily understand that the sensor data relates to deposition rate sensor data. For at least these reasons, the Specification clearly supports the term "deposition rate sensor data".

Just because the sensor data is acquired immediately following the deposition process does not mean that the sensor data is deposition rate sensor data. The are numerous other types of data that are monitored in a deposition process. As discussed above, Applicant disclosed on page 8 of the specification that these monitored data are plasma power, deposition time, temperature, pressure, gas flow, etc. The original specification simply does not disclose deposition rate sensors.

The fact of the matter is, it is well-known in the art that deposition rate sensors are complex, expensive, and unreliable. Therefore, hey have not gained widespread commercial acceptance (see Turner US 4,166,783 @ col. 4 lines 4-7 and Actor et al. US 5,478,455 @ col. 2 lines 42-47). Therefore, knowing that deposition rate sensors are complex, costly, and unreliable, a person skilled in the art at the time the application was filed would not have recognized that the applicant was in possession of "deposition

rate sensors" as claimed in view of the disclosure of the application as filed, since applicant provides no explicit or implicit disclosure of such.

2. Applicant's arguments, see pg. 20, filed 8/31/05, with respect to the 35 U.S.C. 112, 2^{nd} paragraph rejection of claims 1, 3-11, 13-21, 23-41, and 43-61 have been fully considered and are persuasive. The prior 35 U.S.C. 112, 2^{nd} paragraph rejection of claims 1, 3-11, 13-21, 23-41, and 43-61 has been withdrawn.

However, Claims 1, 3-11, 13-21, 23-41, and 43-61 have been newly rejected under 35 U.S.C. 112, 2^{nd} paragraph based on Applicant's arguments, see pages 21-26, filed 8/31/05.

Claim Objections

4. Claims 4, 6, 10, 14, 16, 20, 24, 26, 30, 44, 46, and 50 are objected to because of the following informalities:

Each of the aforementioned claims depends on a rejected claim.

Appropriate correction is required.

5. Applicant is advised that should claim 1 be found allowable, claim 31 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing

one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Unless the Applicant can demonstrate why the scope of claim 31 is different from the scope of claim 1, the objection will be maintained.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 3-11, 13-21, 23-41, and 43-61 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 1, 11, 21, 31, 41, 51, and 61, applicant recites "using deposition rate sensor data for performing said modeling". However, Examiner has been unable to find any disclosure of "deposition rate sensors" in the original specification. Claims 3-10 depend from claim 1, claims 13-20 depend from claim 11, claims 23-30 depend from claim 21, claims 32-40 depend from claim 31, claims 43-50 depend from claim 41, and claims 52-60 depend from claim 51 and thus incorporate the same deficiencies.

This claimed feature was added to the claims in an amendment filed 5/6/03.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 3-11, 13-21, 23-41, and 43-61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 11, 21, 31, 41, 51, and 61, Applicant recites the limitations "target life of the sputter target" and "modeling". Based on Applicant's arguments filed 8/31/05, the meaning of these limitations has been rendered indefinite. Based on Applicant's arguments filed 8/31/05, it appears that Applicant intends for these terms to have a definition contrary to their ordinary meaning.

On page 23 of the Response filed 8/31/05, Applicant states, "Merely disclosing the age of the cathode does not relate to the target life of the sputter target as called for by claims of the present invention." Thus, according to the Applicant, the age or life of the sputtering cathode is different from the age of life of the sputtering target. However, the sputter target of ***Turner*** comprises a cathode. The target and cathode are essentially one and the same. Therefore, it is not clear what Applicant intends the meaning of "target life of the sputter target" to be, if it cannot be construed to mean the "age of the sputter target cathode".

On page 23 of the Response filed 8/31/05, Applicant states, "***Turner*** discloses that the current drawn from the cathode supply is controlled in response to power dissipated in the plasma, the cumulative usage of the particular target, the pressure and the desired deposition rate...However, ***Turner*** does not disclose modeling these

relationships." Examiner has associated the function of ***Turner*** (col. 3 line 28) relating the plasma power, cathode (target) age, and deposition rate with the claimed "modeling". But, according to the Applicant, an empirically obtained mathematical "function" cannot be construed to be "modeling". Therefore, it is not clear what Applicant intends the meaning of "modeling" to be, if it cannot be construed to mean an empirically obtained mathematical "function".

Applicant has the right to act as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, but the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The terms "target life of the sputter target" and "modeling" in the claim are indefinite because the specification does not clearly redefine the terms, and since Applicant argues that the terms mean something other than their ordinary meaning.

Claims 3-10 depend from claim 1, claims 13-20 depend from claim 11, claims 23-30 depend from claim 21, claims 32-40 depend from claim 31, claims 43-50 depend from claim 41, and claims 52-60 depend from claim 51 and thus incorporate the same deficiencies.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. As best understood, claims 1, 3-11, 13-21, 23-41, and 43-61 are rejected under 35 U.S.C. 102(b) as being anticipated by Actor et al. U.S. Patent No. 5,478,455. For example, Actor discloses:

1. A method comprising:

monitoring consumption of a sputter target to determine a deposition rate of a metal layer during metal deposition processing using the sputter target (e.g., col. 8 lines 41-49);

modeling a dependence of the deposition rate on at least one of deposition plasma power and deposition time (e.g., col. 6 lines 13-34), **modeling said dependence of the deposition rate being based upon a target life of the sputter target** (e.g., col. 8 lines 41-49), **modeling said dependence of the deposition rate comprising using deposition rate sensor data for performing said modeling** (e.g., col. 2 lines 42-47, col. 6 lines 30-34, col. 7 lines 29-40, *EN: It is not clear if Actor et al. actually employs deposition rate sensors in the preferred embodiment. Applicant determines the deposition rate* Y_o *and uses the value in the formula disclosed in col. 7. Actor et al. determines the formula empirically or through computer modeling. If the formula were determined empirically, or through observation, then the deposition rate must be observed somehow. In this case, it would seem inherent that some sort of rate "sensor" would have to be used. If the formula were determined using computer*

modeling, then the deposition rate is likely determined based on a known relationship between the deposition rate and the target age. Nevertheless, regardless of whether or not Actor et al. uses deposition rate sensors in the preferred embodiment, Actor et al. clearly discloses that deposition rate sensors can be used to obtain the deposition rate of the sputtered species, although such sensors may not be particularly desirable since they are costly and unreliable.); **and**

applying the deposition rate model to modify the metal deposition processing to form the metal layer to have or approach a desired thickness (e.g., col. 6 lines 13-34).

3. **The method of claim 1, wherein modeling the dependence of the deposition rate on at least one of the deposition plasma power and the deposition time comprises modeling the dependence of the deposition rate on both the deposition plasma power and the deposition time** (e.g., col. 6 lines 13-34).

5. **The method of claim 1, wherein applying the deposition rate model to modify the metal deposition processing comprises inverting the deposition rate model to determine that at least one of the deposition plasma power** (e.g., claim 1, claim 10) **and the deposition time** (e.g., claim 1, claim 11) **to form the metal layer to have the desired thickness** (e.g., col. 6 lines 13-34).

7. **The method of claim 3, wherein applying the deposition rate model to modify the metal deposition processing comprises inverting the deposition rate model to determine the deposition plasma power** (e.g., claim 1, claim 10) **and the deposition time** (e.g., claim 1, claim 11) **to form the metal layer to have the desired thickness** (e.g., col. 6 lines 13-34).

9. **The method of claim 1, wherein modeling the dependence of the deposition rate on the at least one of the deposition plasma power and the deposition time comprises fitting previously collected metal deposition processing data using at least one of**

polynomial curve fitting, least squares fitting, polynomial least squares fitting, non polynomial least squares fitting, weighted least squares fitting, weighted polynomial least squares fitting, and weighted non polynomial least squares fitting (e.g., col. 6 lines 13-40: "polynomial expression or an exact fit analytic expression").

10. The method of claim 2, wherein modeling the dependence of the deposition rate on the target life of the sputter target comprises fitting previously collected metal deposition processing data using at least one of polynomial curve fitting, least squares fitting, polynomial least squares fitting, non polynomial least squares fitting, weighted least squares fitting, weighted polynomial least squares fitting, and weighted non polynomial least squares fitting (e.g., col. 8 lines 41-49: "polynomial or exact fit formula").

32. The method of claim 31, wherein modeling the dependence of the deposition rate on the target life of the sputter target comprises modeling the dependence of the deposition rate on target lives of a plurality of previously processed sputter targets (e.g., col. 8 line 40 – col. 9 line 7).

11. The remaining claims are substantially duplicates of the above claims, and are thus rejected under the same reasoning as indicated above.

12. As best understood, claims 1, 5, 6, 10, 11, 15, 16, 20-21, 25, 26, 30-32, 35, 36, 40-41, 45, 46, 50-52, 55, 56, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Turner U.S. Patent No. 4,166,783. For example, Turner discloses:

1. A method comprising:

monitoring consumption of a sputter target to determine a deposition rate of a metal layer during metal deposition processing using the sputter target (e.g., col. 3 lines

16-19: "The computer determines the deposition rate and the initially required power in view of the elapsed usage of the particular cathode and controls the system accordingly");

modeling a dependence of the deposition rate on at least one of deposition plasma power and deposition time (e.g., col. 3 lines 23-32: "The deposition rate, power dissipation and the aging characteristic are expressed by an empirically obtained function specific to the cathode material which is stored in the computer; $f(P,r,\tau,\rho)=0$ where P is the power, r is the deposition rate, τ is the integrated "age" of the cathode in kilowatt hours and ρ is the pressure"), **modeling said dependence of the deposition rate being based upon a target life of the sputter target** (e.g., col. 3 lines 23-32: "The deposition rate, power dissipation and the aging characteristic are expressed by an empirically obtained function specific to the cathode material which is stored in the computer; $f(P,r,\tau,\rho)=0$ where P is the power, r is the deposition rate, τ is the integrated "age" of the cathode in kilowatt hours and ρ is the pressure", *EN: Examiner is associating Turner's "integrated age of the cathode in kilowatt hours" with the claimed "target life of the sputter target"*), **modeling said dependence of the deposition rate comprising using deposition rate sensor data for performing said modeling** (e.g., col. 1 lines 34-37, col. 3 line 64 – col. 4 line 7); **and**

applying the deposition rate model to modify the metal deposition processing to form the metal layer to have or approach a desired thickness (e.g., col. 3 lines 12-16, col. 3 lines 32-36).

5. The method of claim 1, wherein applying the deposition rate model to modify the metal deposition processing comprises inverting the deposition rate model to determine at least one of the deposition plasma power (e.g., col. 3 lines 32-36) **and the deposition time to form the metal layer to have the desired thickness.**

10. The method of claim 2, wherein modeling the dependence of the deposition rate on the deposition plasma power (implied) **and target life** (Fig. 1) **of the sputter target comprises fitting previously collected metal deposition processing data using at least one of polynomial curve fitting, polynomial least-squares fitting, non-polynomial least-squares fitting, weighted least-squares fitting, weighted polynomial least-squares fitting, and weighted non-polynomial least-squares fitting** (Fig. 1 illustrates the modeling of the dependence of deposition rate on sputter target life using least-squares fitting – it is implied that the dependence of deposition rate on deposition plasma power is modeled in a similar fashion).

32. The method of claim 31, wherein modeling the dependence of the deposition rate on the target life of the sputter target comprises modeling the dependence of the deposition rate on target lives of a plurality of previously processed sputter targets (e.g., col. 2 lines 10-13).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. As best understood, claims 1, 3-11, 13-21, 23-41, and 43-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Actor et al. US 5,478,455 in view of Iturralde US 5,665,214.

Actor et al. clearly discloses most of all the claimed features as discussed above. Actor et al. also discloses that deposition rate sensors are known in the art (e.g., col. 2

lines 38-56). As discussed above, it is not entirely clear whether Actor et al. uses the deposition rate sensors in the preferred embodiment.

Assuming for a moment that Actor et al. does not use deposition rate sensors in the preferred embodiment, one might be inclined to argue that Actor et al. therefore cannot anticipate the claimed limitation "using deposition rate sensor data". Although Examiner would not agree with this argument, hence the 35 U.S.C. 102 rejection above, the claims are nevertheless additionally rejected here under 35 U.S.C. 103 in view of Iturralde et al.

Iturralde et al. discloses an automatic film deposition method and system that includes deposition rate sensors (e.g., col. 4 line 48 – col. 5 line 15). It would have been obvious to one have ordinary skill in the art to modify Actor et al. with Iturralde et al. since Iturralde et al. teaches that deposition rate sensors can be used to determine a rate at which a thin film is accumulating or growing on the sensor, which in theory is substantially identical to the thin film being deposited on the wafer, and since Iturralde et al. further teaches that a thickness controller can then control the deposition process based on this deposition rate feedback signal (e.g., col. 5 lines 16-25).

15. As best understood, claims 3, 4, 7, 8, 13, 14, 17, 18, 23, 24, 27, 28, 33, 34, 37, 38, 43, 44, 47, 48, 53, 54, 57, 58, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turner in view of Sullivan et al. U.S. Patent No. 6,217,720. Turner does not specifically disclose "modeling a dependence of the deposition rate on the deposition time or inverting the deposition rate model to determine the deposition time

to form the metal layer having a desired thickness". However, Sullivan et al. discloses a multi-layer reactive sputtering method comprising modeling the dependence of a deposition rate on a deposition time and determining the time required to form a metal layer having the desired thickness (e.g. Fig. 5, col. 7 line 50 – col. 8 line 10, col. 8 line 60 – col. 9 line 15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Sullivan et al. with the system of Turner since Sullivan et al. teaches that modeling a dependence of a sputtering deposition rate on the deposition time can assist in optimizing a desired layer thickness using a relatively high deposition rate and short deposition time.

16. As best understood, claims 9, 19, 29, 39, 49, and 59, are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Turner*** as applied to claims 1, 2, 11, 12, 21, 22, 31, 32, 41, 42, 51, and 52 above. ***Turner*** does disclose modeling the dependence of deposition rate on deposition power as noted above. However, ***Turner*** does not explicitly disclose that the dependence of deposition rate on deposition power is modeled using the curve-fitting techniques of the claimed invention.

However, ***Turner*** does disclose in Fig. 1 modeling the dependence of deposition rate on sputter target life using curve-fitting techniques. Additionally, it is well known in the art to use the various curve-fitting techniques of the claimed invention to model historical data. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify ***Turner*** to include the capability to model the dependence of deposition rate on deposition power using the various curve-

fitting techniques since ***Turner*** already discloses curve-fitting as a means to ***accurately*** model the dependence of deposition rate on target life, and also since the multiple curve-fitting techniques of the claimed invention are well-known in the art.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan A. Jarrett whose telephone number is (571) 272-3742. The examiner can normally be reached on 10:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan A. Jarrett
Examiner
Art Unit 2125

10/4/05
RAJ

L. P. Picard

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